



Gladius

User's Manual

Nova 3710 Motherboard, 12.1 & 15 inch LCD's

NOVA 3710 Main Board

NOVA 3710 Main Board

Federal Communications Commission (FCC)

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

Reorient or relocate the receiving antenna.

Increase the separation between the equipment and the receiver.

Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.

Consult the dealer or an experienced radio/TV technician for help.

Shielded interconnect cables and shielded AC power cables must be employed with this equipment to insure compliance with the pertinent RF emission limits governing this device. Changes or modifications not expressly approved by the system's manufacturer could void the user's authority to operate the equipment.

Declaration of Conformity

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference, and
2. this device must accept any interference received, including interference that may cause undesired operation.

NOVA 3710 Main Board

NOVA 3710 Main Board

DHHS- the CD-ROM Drive

FDA Regulations require the following statement for all laser-based devices:

“Caution, Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.”

Caution: This appliance contains a laser system and is classified as a “CLASS 1 LASER PRODUCT”. To use this model properly, read the instruction manual carefully and keep this manual for future reference. In case of any trouble with this model, please contact your nearest “Authorized Service Station”. To prevent direct exposure to the laser beam, do not try to open this enclosure.

Important Safety Information

SAFETY INSTRUCTIONS

1. Please read these safety instructions carefully.
2. Keep this User's Manual for later reference.
3. Disconnect this equipment from the AC outlet before cleaning. Don't use liquid or spray detergent for cleaning. Use only a moistened sheet or cloth.
4. For pluggable equipment, the socket-outlet should be installed near the equipment and should be easily accessible.
5. Keep this equipment from humidity.
6. Lay this equipment on a stable surface when installing.
7. Do not leave this equipment in a non-air-conditioned environment, or in a storage temperature above 60° C. Such conditions may damage the equipment.
8. The openings on the enclosure are for air convection and protect the equipment from overheating. DO NOT COVER THE OPENINGS.
9. Check the voltage of the power source when connecting the equipment to the power outlet.
10. Place the power cord so that it will not be stepped on. Do not place anything over the power cord. The power cord must be rated for the product and for the voltage and current marked on the product's electrical ratings label. The voltage and current rating of the cord should be greater than the voltage and current rating marked on the product.
11. All cautions and warnings on the equipment should be noted.
12. If the equipment is not used for a long time, disconnect the equipment from the mains to avoid damage.
13. Never allow liquid into ventilation openings. This could cause fire or electrical shock.
14. Never open the equipment. For safety reasons, qualified service personnel should only open the equipment.
15. If one of the following situations arises, get the equipment checked by service personnel:
 - a. The Power cord or plug is damaged.
 - b. Liquid has penetrated the equipment.
 - c. The equipment has been exposed to moisture.
 - d. The equipment does not work well or you cannot get it work according to the user's manual.
 - e. The Equipment has been dropped and damaged.
 - f. The equipment has obvious signs of damage.

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Introduction

Gladius Characteristics

- Gladius uses a high speed processor capable of handling a high capacity of data efficiently.
- Gladius's solid quality Aluminum housing distinguishes it from ordinary plastic housings.
- The Gladius touch terminal all-in-one design combines a powerful PC, multiple LCD and touch screens, which are suitable for any market. The primary LCD panel can be tilted at multiple angles.
- Gladius's functionality extends far beyond the standard setup. Gladius can be adapted for a variety of uses with the addition of any of the following options: Magnetic Card Reader, VFD/LCD customer display and cashdrawer, Modem, LAN, Audio devices, Compact Flash or USB devices (all available upon request).
- Gladius's security is designed to prevent data theft. The Gladius system is comprised of an internal 3.5" HDD and removable external CD-Rom and FDD making it hard to copy data without authority.
- The solid aluminum design enhances heat dissipation and passes EMI testing.

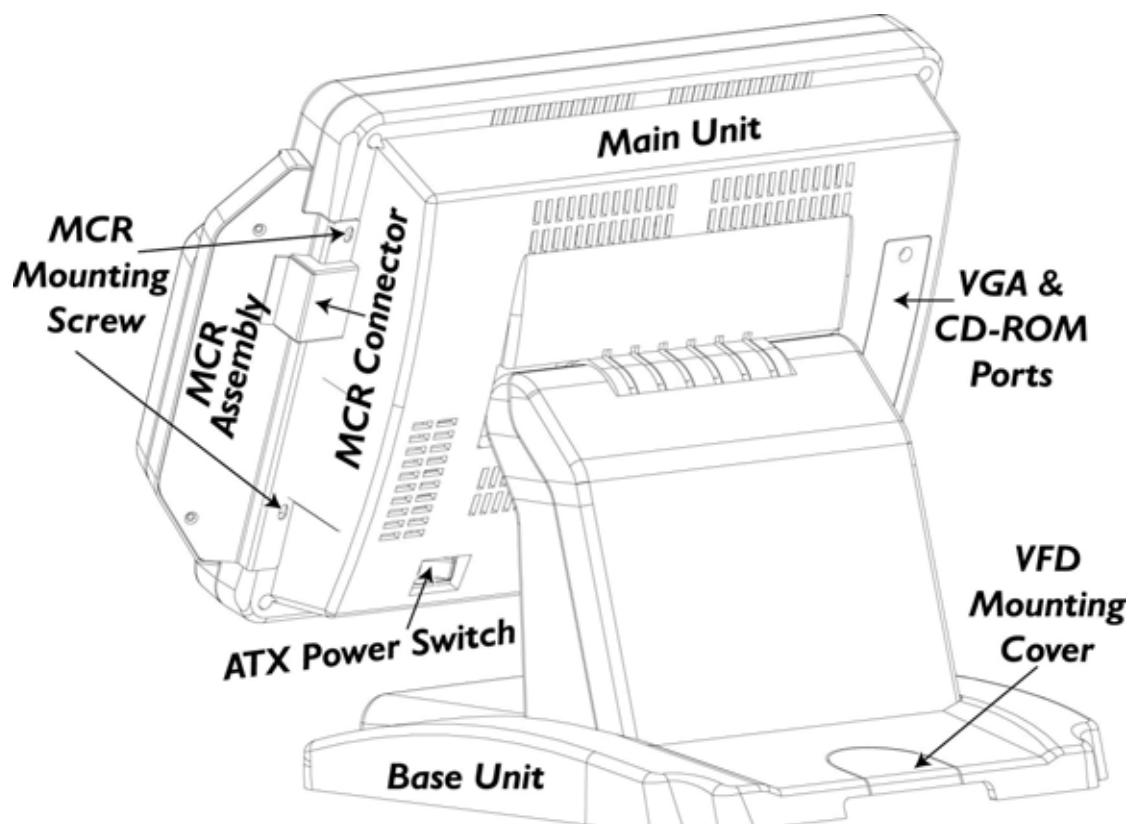
How to Use This Manual

This manual contains all the information you need to set up and use Gladius. In addition, you can also consult the manuals for the operating system and added hardware.

- Chapter 1** Provides an introduction to Gladius and this manual.
- Chapter 2** Provides all necessary information for all hardware setup.
- Chapter 3** Provides the necessary information for installing the Video drivers and the touch screen tools, Audio and LAN drivers.
- Chapter 4** Lists all Gladius specifications and Information for the 9000PB0090, 9000PB0100 and 9000PB0230 I/O board configuration.
- Chapter 5** Provides information for troubleshooting Gladius.

A Visual Tour of Gladius

Before you start, take a few moments to become familiar with Gladius.



What comes with Gladius

The following items are standard with Gladius:

- Main system with LCD panel
- Base
- ATX power supply
- Gladius user's guide
- Nova 3710 motherboard user's guide
- ELO touch screen driver CD
- Motherboard chipset driver CD
- AC power cord



Gladius and power adapter



Gladius with MCR



Gladius with VFD

The following items are optional:

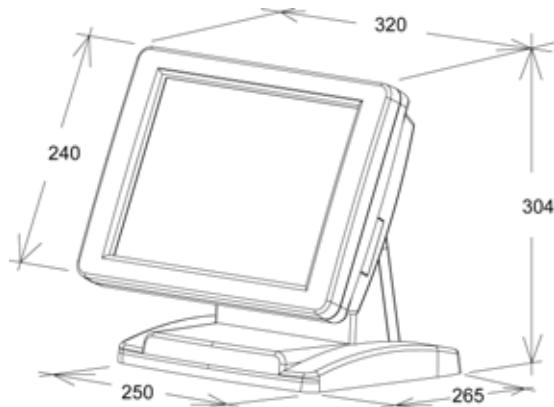
- Magnetic card reader (MCR) and bracket
- External CD-ROM drive with cable
- External floppy disk drive with cable
- VFD customer display

Optional accessories

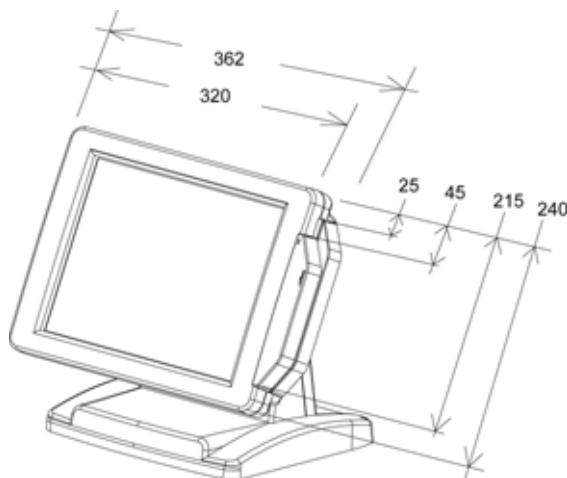


Dimensions
12.1"

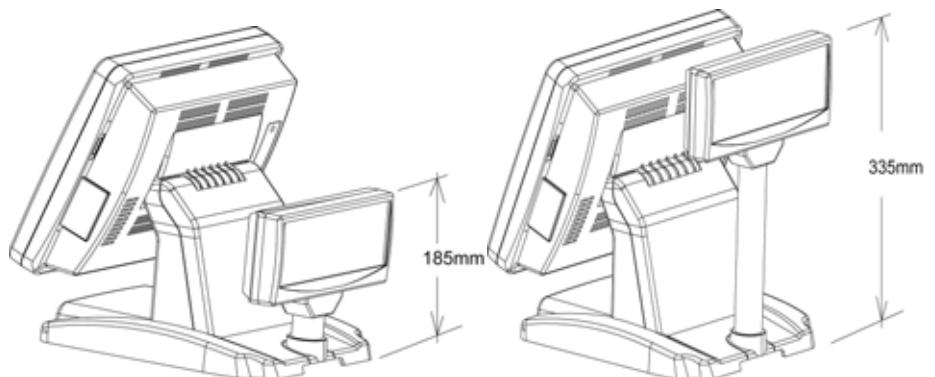
Gladius Dimensions



Gladius and MCR Dimensions

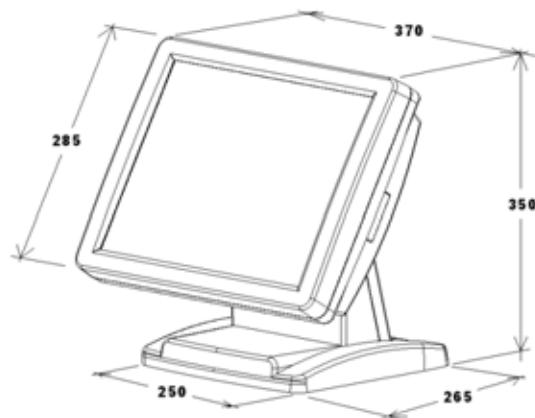


Gladius and VFD customer display

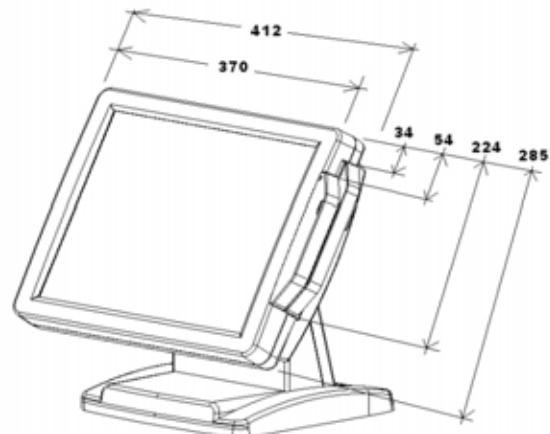


Dimensions
15"

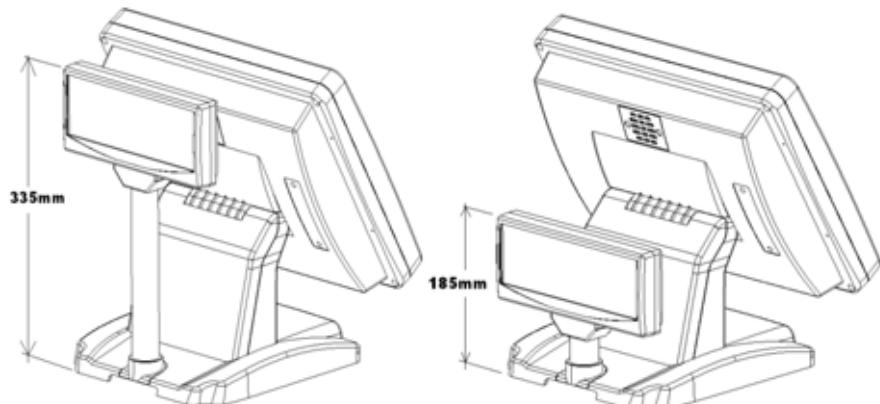
Gladius
Dimensions



Gladius and MCR
Dimensions



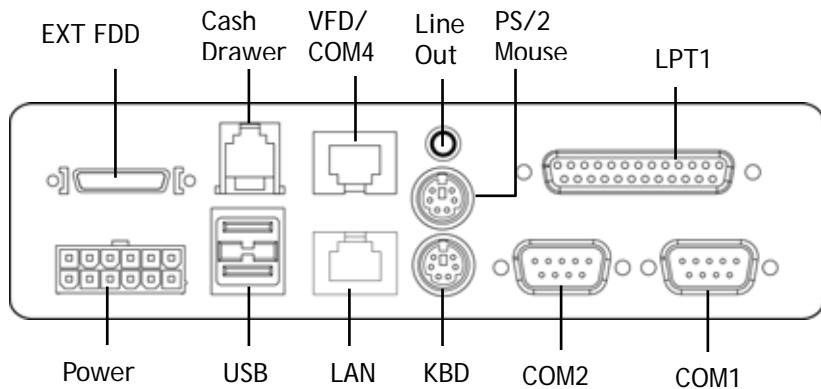
Gladius and VFD
customer display



Connector Panels Single Display

Primary Connector Panel

The primary connector panel is located at the bottom of the main unit base. To clearly see the panel you must turn Gladius upside down.

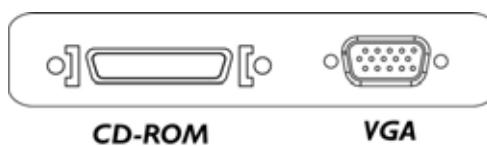


I/O Port	Connector Type	Description
Power	DC Power Connector	Connects Gladius to the power supply.
USB	USB	The USB (Universal Serial Bus) port can be used to connect USB devices.
LAN	LAN RJ45 Connector	The LAN port is used to hook Gladius to a local area network.
KBD	PS/2 Keyboard Connector	The KBD port for an external keyboard.
PS2/Mouse	PS/2 Mouse Connector	PS2 ports can be used for a mouse.
COM1 COM2	DSUB Connector	The serial ports COM1/COM2 can be used to connect serial devices such as a mouse or a fax/modem.
EXT FDD	26 PIN SCSI II Connector	The FDD port is used to attach an external 1.44MB floppy disk driver.
Cash Drawer	RJ11 Connector	Cash Drawer Connector, 12 V Actuation support for solenoid.
VFD	VFD/ COM4 RJ45 Connector	The VFD port is used to attach An RJ45 cable for a VFD customer display.
Line Out	Earphone Connector	The audio port is for speakers.
LPT1	DSUB Connector	The parallel port LPT1 can be used to connect parallel devices, such as a printer.

Second Connector Panel

The Second connector panel is located on left side of the back of the main unit. It comes with a cover that needs to be removed to install a CD ROM Driver or a VGA monitor.

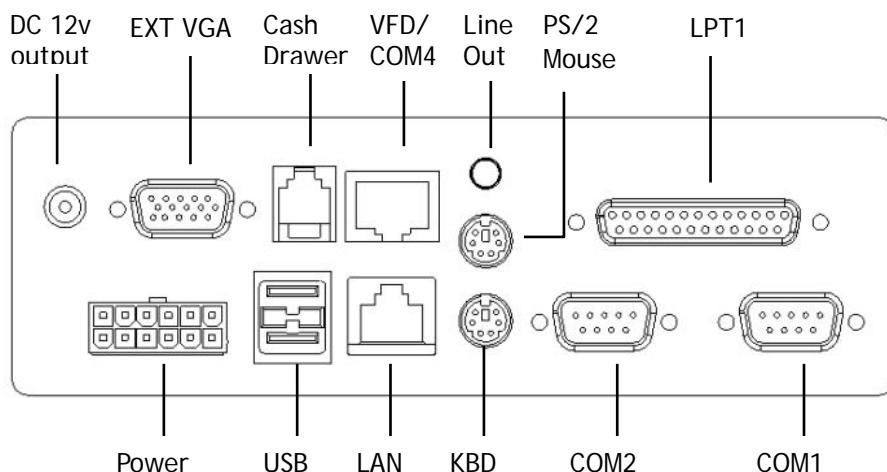
I/O Port	Connector Type	Description
VGA	VGA Connector	The VGA port is for an external LCD or CRT monitor that mirrors the primary display.
CD-ROM	36 PIN SCSI II Connector	The CD-ROM port is used to attach an external CD-ROM.



Connector Panels Dual Display

Primary Connector Panel

The primary connector panel is located at the bottom of the main unit base. To clearly see the panel you must turn Gladius upside down.



Note: This configuration is for Gladius units that have been supplied with an integral second LCD panel, therefore you must use an external USB floppy drive unit if required.

I/O Port	Connector Type	Description
Power	DC Power Connector	Connects Gladius to the power supply.
USB	USB	The USB (Universal Serial Bus) port can be used to connect USB devices.
LAN	LAN RJ45 Connector	The LAN port is used to hook Gladius to a local area network.
KBD	PS/2 Keyboard Connector	The KBD port for an external keyboard.
PS2/Mouse	PS/2 Mouse Connector	PS2 ports can be used for a mouse.
COM1 COM2	DSUB Connector	The serial ports COM1/COM2 can be used to connect serial devices such as a mouse or a fax/modem.
EXT VGA	15 PIN VGA Connector	The Ext VGA port is used to attach an external 2 nd Panel display or CRT monitor.
DC 12V Out	2 PIN Socket	This is used for the 2 nd Panel display.
Cash Drawer	RJ11 Connector	Cash Drawer Connector, 12 V Actuation support for solenoid.
VFD	VFD/ COM4 RJ45 Connector	The VFD port is used to attach An RJ45 cable for a VFD customer display.
Line Out	Earphone Connector	The audio port is for speakers.
LPT1	DSUB Connector	The parallel port LPT1 can be used to connect parallel devices, such as a printer.

Second Connector Panel

The Second connector panel is located on left side of the back of the main unit. It comes with a cover that needs to be removed to install a CD ROM Driver or a VGA monitor.

I/O Port	Connector Type	Description
VGA	VGA Connector	The VGA port is for an external LCD or CRT monitor that mirrors the primary display.
CD-ROM	36 PIN SCSI II Connector	The CD-ROM port is used to attach an external CD-ROM.



Chapter 2

Hardware Setup

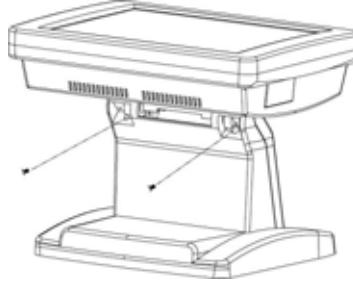
Gladius Assembly

Please make sure that the system power is turned off and the power supply is disconnected when making any hardware changes to Gladius.

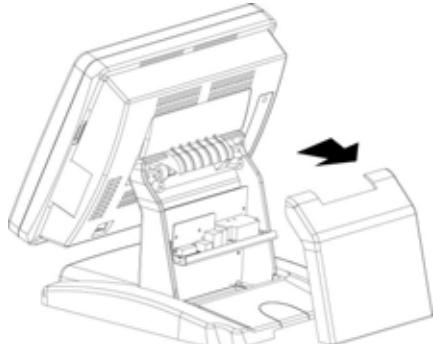
Remove the rear neck plate

There are two I/O ports, 9000PB0090 and 9000PB0100, located on the back of the neck. The rear neck plate must therefore be removed before alterations can be made to the hardware. As an example, to set up for DC+5V or DC+12V at Pin9 of COM1 or COM2, follow the steps:

1. Tilt the screen to 180 degrees.



2. Unscrew the 2 screws adjacent to the hinges.



3. Tilt the screen to 90 degrees.

4. Remove the rear neck plate.

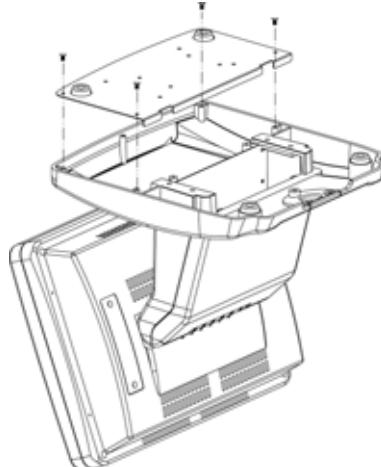
5. Select the appropriate jumper settings as needed; refer to **CON4&CON41** of Com1 and COM2 D-sub connector.

Hard Disk Drive Installation

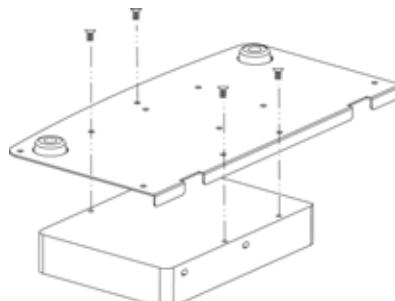
Gladius comes with an empty hard disk drive (HDD), unless a special request has been made.

Installing a HDD

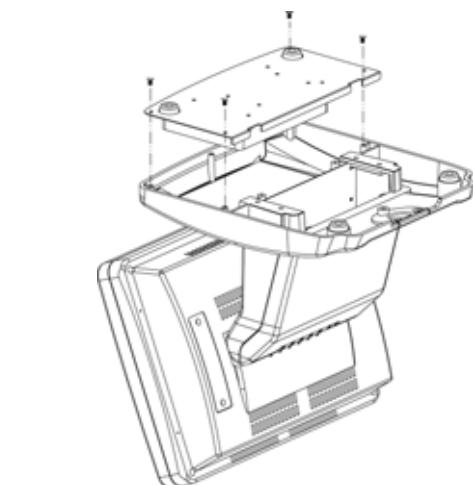
1. Turn off power and remove power cable from main unit.



2. Remove the Base/HDD Plate from the base (4 screws).



3. Secure the hard disk drive on the plate (4 screws).



4. Plug the IDE and power cable to the HDD. The red stripe on the ribbon cable should be aligned with PIN1 on the IDE connector of HDD.

5. Put the plate back to the base and secure with 4 screws.
6. Connect the main unit power.

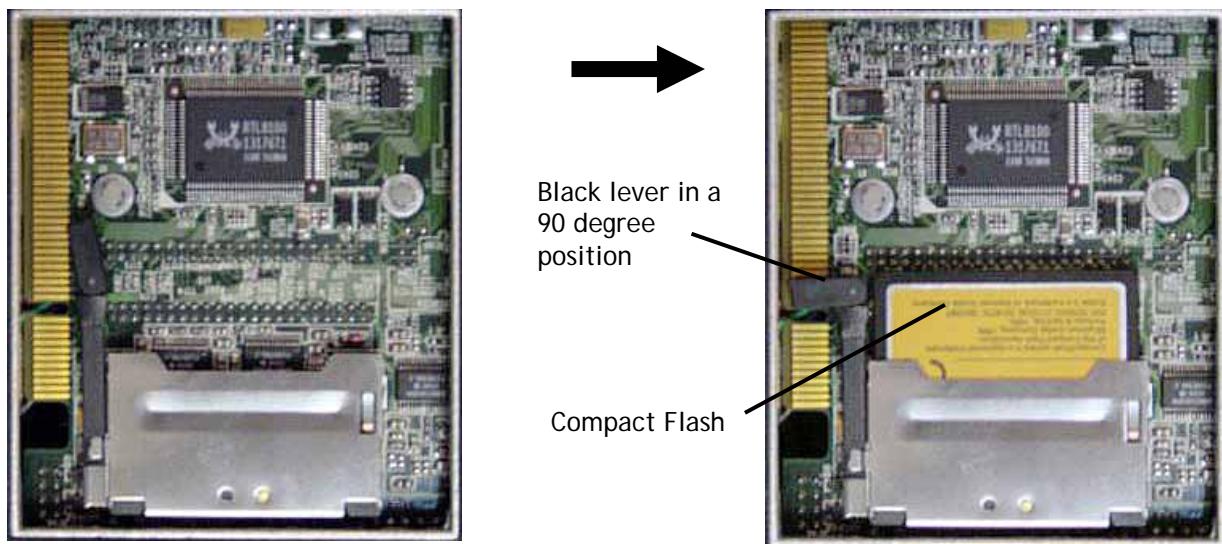
Note: If the HDD does not work normally, please refer to [troubleshooting](#).

Compact Flash Installation

Gladius will configure Compact Flash in IDE mode as secondary master after it is installed. The next available drive letter will be automatically assigned to Compact Flash.

Installing Compact Flash

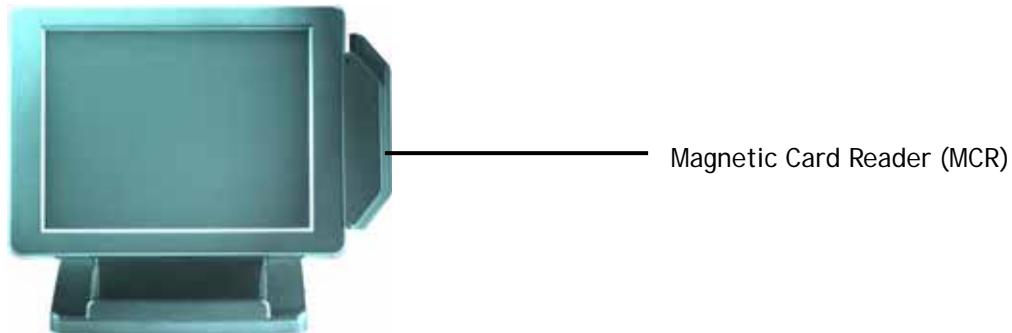
1. Turn off power and remove power cable from Gladius.
2. As the compact Flash socket is located on the soldering side of M/B, remove the 4 screws and disassemble the front panel plate.
3. Insert Compact Flash and lock the black lever in a 90 degree position.



4. Reassemble front panel plate to main unit.
5. Connect the main unit power.

Magnetic Card Reader Installation

An optional Magnetic Card Reader (MCR) can be installed on the right side of Gladius.

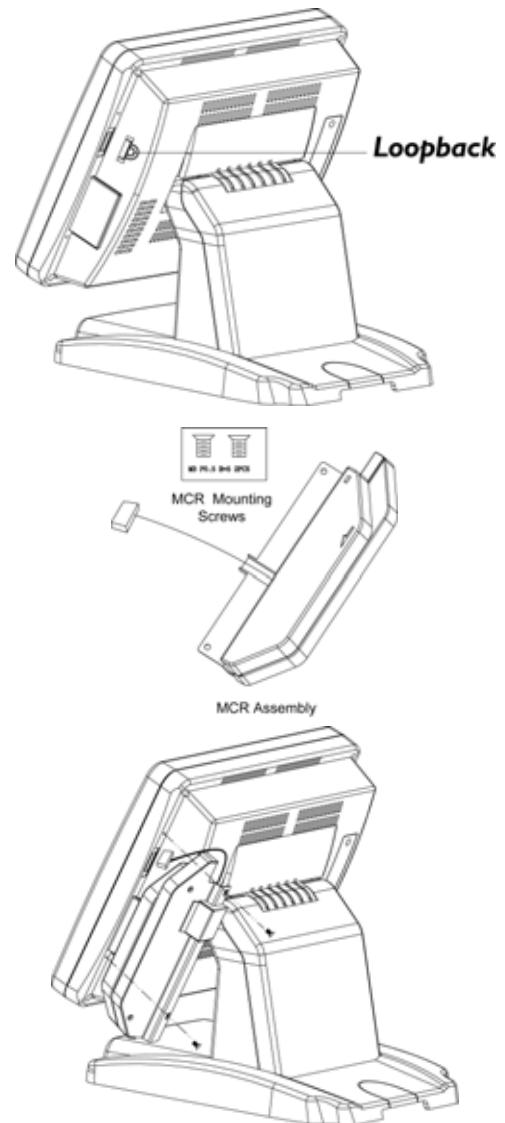


Installing an MCR

1. Turn off system power.

2. Unplug the loopback from the MCR socket. The MCR socket is found on the right side on the back of the main Unit.
3. Attach the MCR Assembly to the main unit and connect the MCR cable to the MCR socket.

4. Secure the MCR to the main unit with 2 screws.



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5. Turn on system power.



Note: If the MCR does not work normally, please refer to [troubleshooting](#).

Attention: The loopback or the MCR cable must be inserted in the socket for an external keyboard to function with Gladius.

MCR Parameter Modification

This option is for users who need to customize the MCR parameters for a particular task. Some of the useful parameters include:

The selection of country code, other than the default English.

The choice of track combinations.

The preamble/postamble codes.

The MCR parameters can be modified by using the supplied utility program.

The utility can be found on the CD that came with your system in the “Utilities” folder. The program name is **msr_v12_win.zip**.

If you are upgrading an earlier system to include our MCR reader, then this utility can be located on our website at http://www.firich.com.tw/tech_drivers.htm in the section labeled as “MSR Utility”.

Unzip this file onto your system hard disk, in a folder of your choice.

It will also create 3 subfolders named **Disk1**, **Disk2**, and **Disk3**.

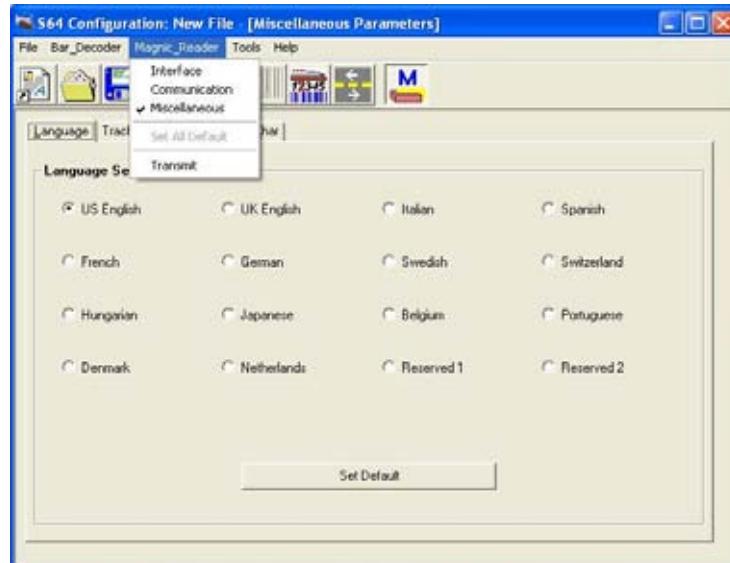
Change to the folder “**Disk1**” and run the “**Setup.exe**” program, and follow the simple onscreen instructions.

When the installation finishes, you will find that a new folder has been created in your “Program files” folder, labeled as “Decoder” with a subfolder named “**S64 Decoder**”.

Now change folder to **C:\Program Files\Decoder\S64 Decoder** and run the program named “**S64_cfg.exe**”.

When the program has loaded please select the **Magnetic_Reader** menu item as in the following picture. By using the 3 top items listed; **Interface**, **Communication** and **Miscellaneous**, you will be able to alter many of the parameters associated with the MCR unit.

When you have finished your modifications and are sure that they are set exactly how you want them to be, just click on the menu item **Transmit** to download the new parameter to the MCR unit. Please refer to the Help menu for any further assistance.



VFD Customer Display Installation

An optional VFD customer display can be installed on the back of Gladius.



Rear view with VFD attached.

Installing a VFD

1. Turn off system power.
2. Make sure that JP1 and JP2 on the secondary I/O board 9000PB0100 are set correctly. It's important to note that the supply voltage for the customer display has been set to +12V, which is for VFD type. IF an LCD customer display is chosen, please change it to +5V through JP1 on 9000PB0100. Please refer to page 59, [Mode1 RJ45 connector used for VFD](#).

3. Remove the VFD Mounting Cover from the base.

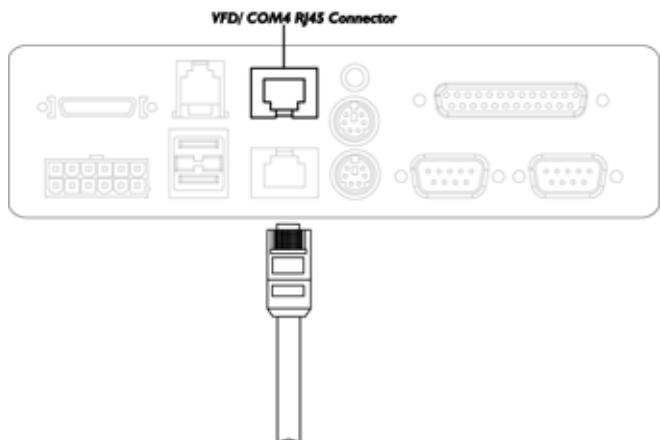


4. Secure the VFD Holder to the base with 3 screws and place VFD display into the holder.



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5. Connect the VFD RJ45 cable in the VFD/COM4 port on the I/O panel which located under the base.



6. Turn on VFD power switch, then turn on system power.



Note: If the VFD does not display correctly after an application is loaded, please refer to [troubleshooting](#).

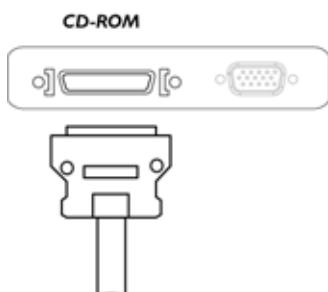
External Floppy Drive Installation

1. Please make sure the Driver A in the CMOS setup is enabled for 1.44MB.
2. Turn off system power.
3. Connect FDD cable to the EXT FDD port of Gladius.

Note: If the EXT FDD does not work normally, please refer to [troubleshooting](#).

CD-ROM Installation

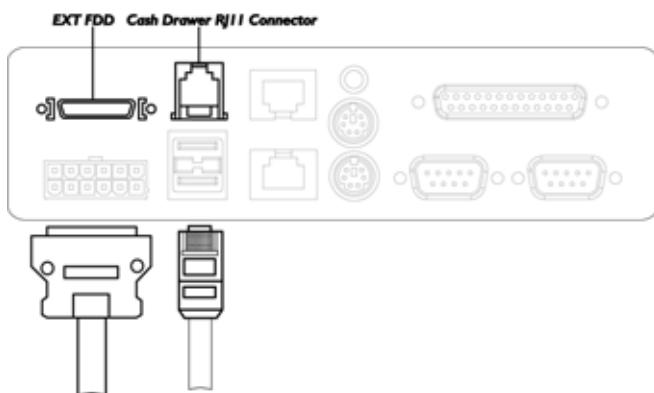
1. Please make sure the IDE 2 in the CMOS setup is enabled.
2. Turn off the power.
3. Plug the CD-ROM cable to the CD-ROM port.



Note: If the CD-ROM cannot be detected by the system, please refer to [troubleshooting](#).

Cash Drawer Installation

1. Before connecting the cash drawer to Gladius, please make sure the driver voltage and cable pin assignment of the cash drawer matches the definition of the cash drawer port of Gladius. Please refer to page 68 Cash Drawer .
2. Plug cash drawer cable into cash drawer port.



Note: If the cash drawer cannot be detected by the system, please refer to [troubleshooting](#).

3. Up to two cash drawers may be driven from this port. The driving voltage of solenoid is DC+12V. I/O port 408h is used for solenoid operation.
To open drawer1, write E0h to this port, wait 200 msec, then write F0h to turn off the drive.
To open drawer2, write D0h to this port, wait 200 msec, then write F0h to turn off the drive.

Optional Second LCD Panel Display

An optional second LCD panel can be easily installed on Gladius. To install a second LCD panel Gladius must have mainboard NOVA3710DV installed.

There are two standard pole heights that may be ordered, 150mm and 400mm.

The mechanical fitting of the second panel display is a very simple process.

Position the Gladius onto it's side.

Remove the 3 screws and Mounting Cover from the base unit.

Position the already assembled Second Panel Display, Pole and Holder to the base and secure firmly with the 3 screws.

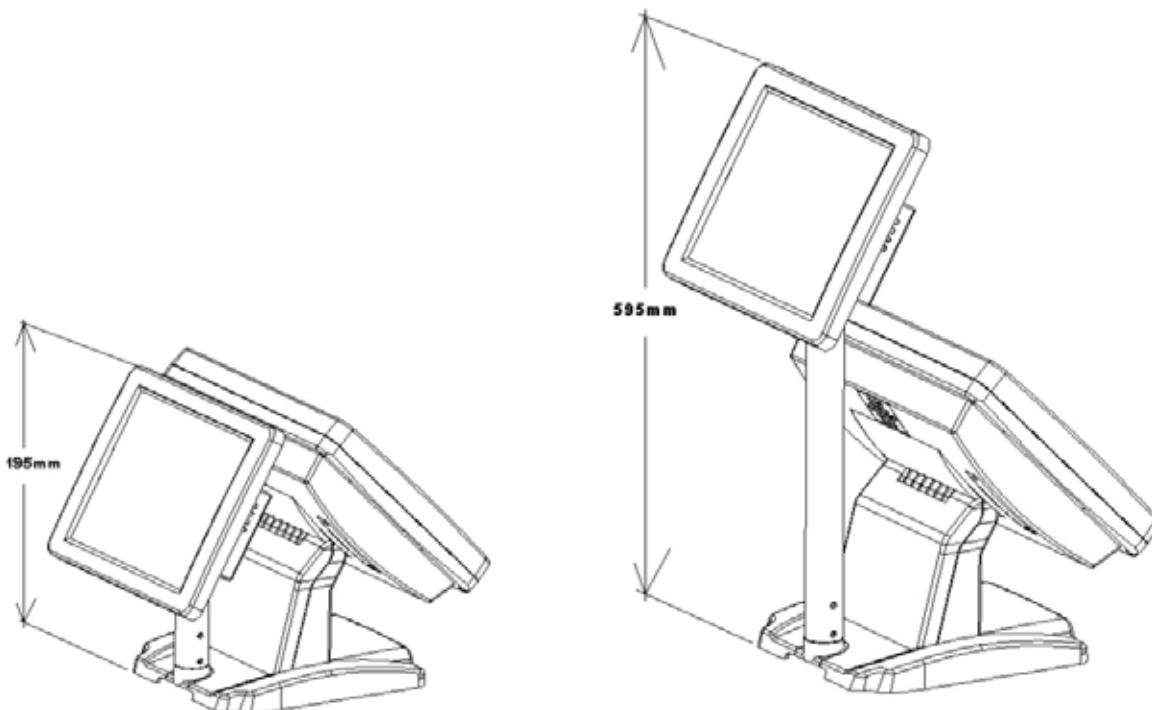
Now connect the Second Panel Display cables to the Power and VGA sockets on the underside of the Gladius unit. If you also ordered the second display Touch panel option then connect this to the COM4 socket.

Note. CMOS BIOS settings should be altered to make COM4 use IRQ11, and both SIS and C&T VGA chips should be enabled.

SIS should be set as the primary display and C&T as the secondary display.

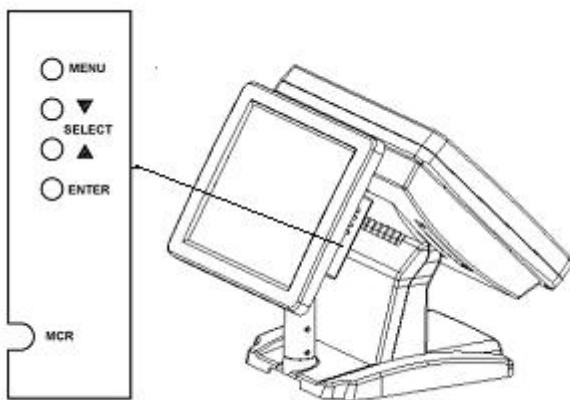
Dependant upon which operating system is used, drivers will have to be installed, therefore please refer to the CD that came with your Gladius, or visit our website at:

http://www.firich.com.tw/tech_drivers.htm



OSD Settings for Second LCD Panel

Gladius secondary LCD panel has built-in OSD (on screen display) controls to adjust various display parameters. The control buttons are located on the right side of the back cover.



OSD Settings

There are four buttons on the OSD panel: Select, Down, Up, and Enter. The functions of these four buttons are as follows:

Menu	Press to open the OSD window. Back one menu level up. Press to exit the OSD window while in OSD mode.
DownArrow	Press to scroll item selection bar down. To decrease the parameter value. To switch the item selection (Ex: YES / NO).
UpArrow	Press to scroll item selection bar up. To increase the parameter value. To switch the item selection (Ex: YES / No).
Enter	Enter the selected sub-menu. Confirm selected function.

OSD Menu Structure

RGB Menu	Brightness
	Red -127~127
	Green -127~127
	Blue -127~127
	Color Temp 0~7
	Sharpness 0,1
	Main Menu

CMOS Setup

Gladius systems have adopted the motherboards NOVA3710SV , using AWARD BIOS.

Please refer to the NOVA3710 M/B User's Manual Chapter 4 for a detailed description of the BIOS CMOS setup.

Software Setup

Gladius comes with a variety of drivers for different operating systems. You will find 2 CDs with Gladius.

The first CD contains the ELO Touch Tools. This CD has the necessary software for the touch screen function of one or two LCD panels.

The second CD has all the necessary drivers to setup Gladius.

VGA Driver Installation

The VGA chipsets is:

- SIS300 3D controller for the LCD panel.

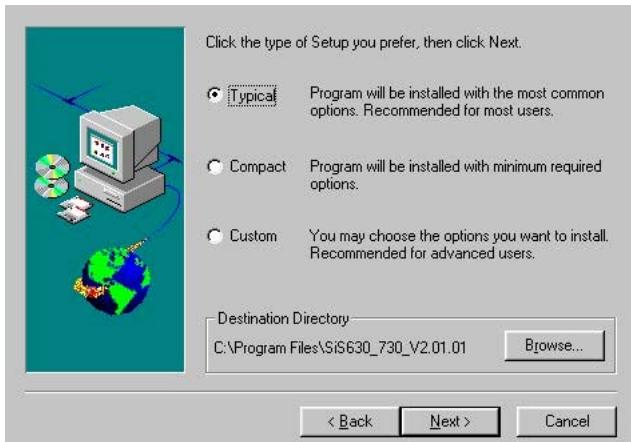
SIS300 driver installation Windows 98

1. Locate the VGA folder on the utilities CD.
2. Open the **SIS/SIS630/Win9x** folder.
3. Run **Setup.exe**
4. Select **Next** to continue.

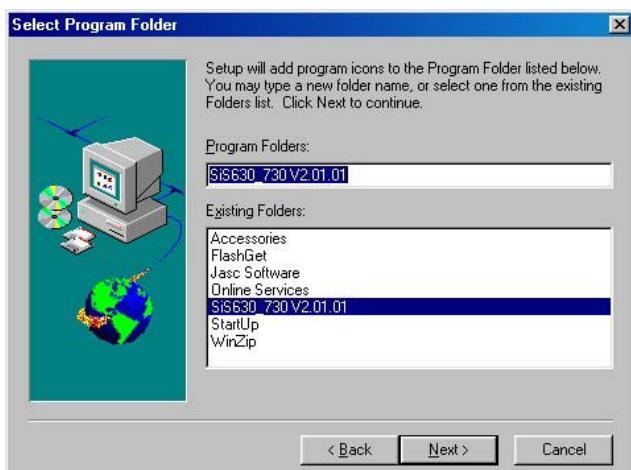


NOVA 3710 Main Board

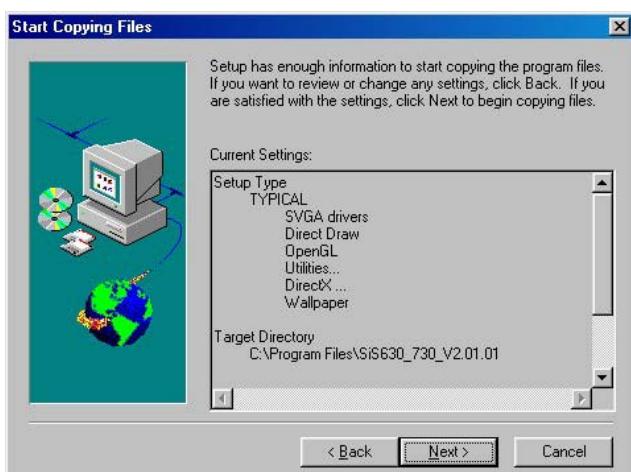
5. Select the set up you prefer and location for the installation. It is recommended to install in the default location.



6. Select the Program Folder you want.



7. If you are satisfied with the settings click **Next**.



Installation could take a few minutes.

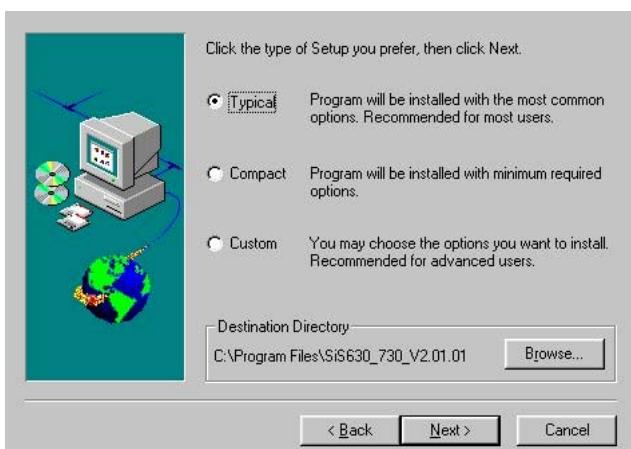
8. Restart Gladius to complete the installation procedure.

SIS300 driver installation Windows 2000

1. Open D:\VGA\SIS\SiS630\WIN2000 folder.
2. Run **Setup.exe**
3. Select **Next** to continue.

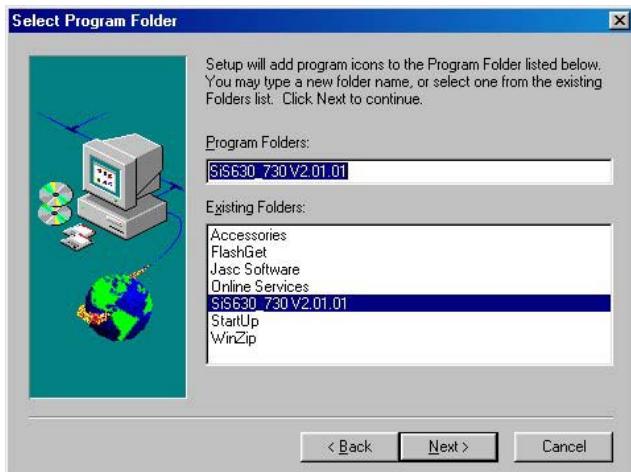


4. Select the set up you prefer and location for the installation. It is recommended to install in the default location.

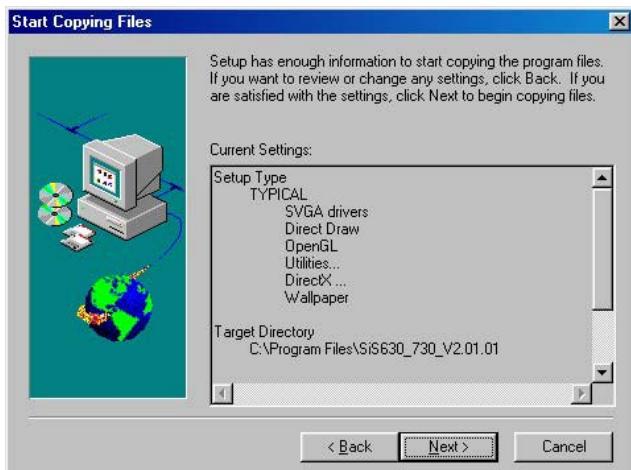


NOVA 3710 Main Board

5. Select the Program Folder you want.



6. If you are satisfied with the settings click **Next**.



Installation could take a few minutes.

7. Restart Gladius to complete the installation procedure.

Second LCD Panel Driver

C & T 69000 VGA Driver Installation Windows 98

1. Open the D:\VGA\CT\65555-69k\Win98 folder.

Run **98600.exe**



2. Click **Next**.



NOVA 3710 Main Board

3. Click Yes.



4. Select Yes, I want to restart my computer now.

Click **Finish**.



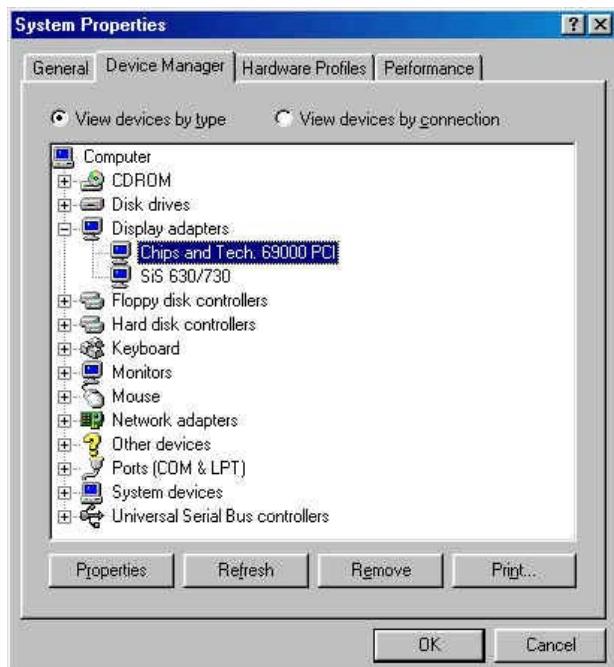
Enable Second LCD Panel Settings Windows 98

After you have installed the VGA drivers for both the Primary LCD panel and second LCD panel you must adjust the settings.

1. Open **Device Manager** in the **System Properties**.

Select **Chips and Tech 69000 PCI**

Click **Properties**.



2. Click **Yes** to enable the second LCD monitor.



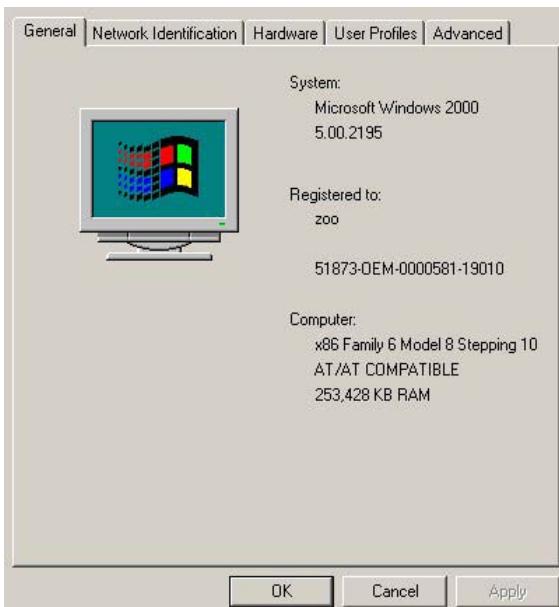
3. Select the **Extend my Windows desktop onto this monitor** box
Click **OK**.



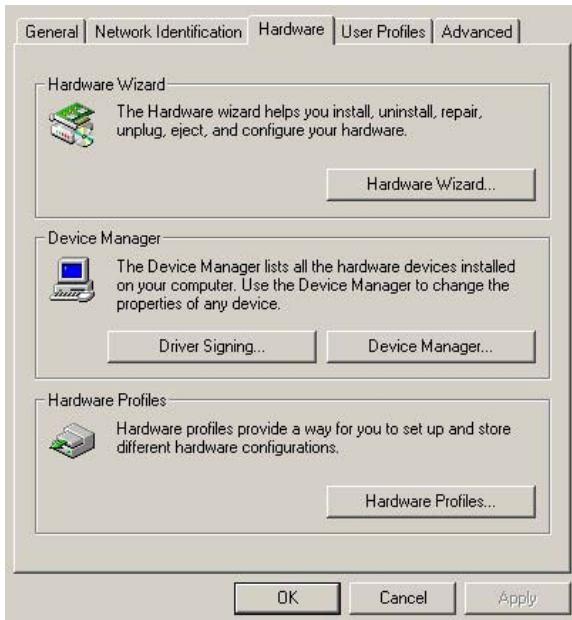
During boot sequence **“No Sync”** will appear on the second LCD panel. The boot sequence can take a minute or so when a second LCD panel is installed.

C & T 69000 VGA Driver Installation Windows 2000

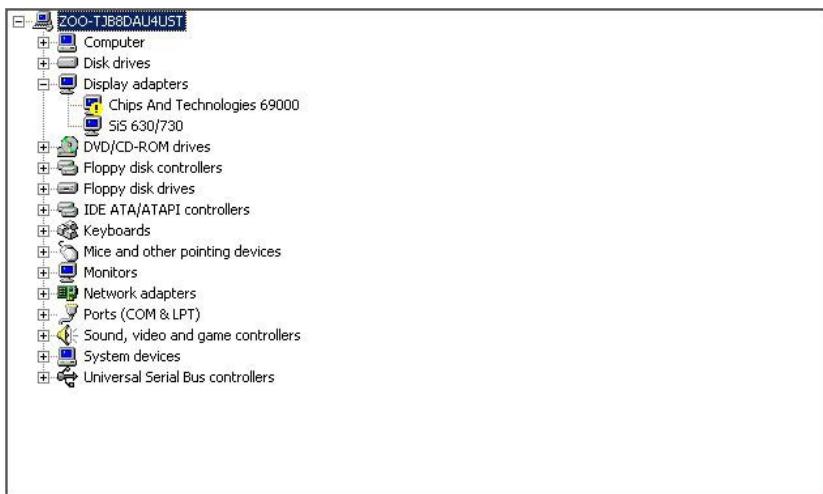
1. On the Gladius Desktop right click **My Computer**.
2. Click the **Hardware** tab.



3. Click Device Manager.



4. Right click **Chips and Technologies (Asilient) 69000**.



5. Select **Properties**.



NOVA 3710 Main Board

6. Click the **Driver** tab.



7. Click **Update Driver**.



8. Click **Next**.



9. Select **Display a list of known drivers for this device so that I can choose a specific driver.**

Click **Next.**



10. Select **Chips and Technology (Asilant) 69000.**

Click **Have Disk.**



11. Click **Browse.**



NOVA 3710 Main Board

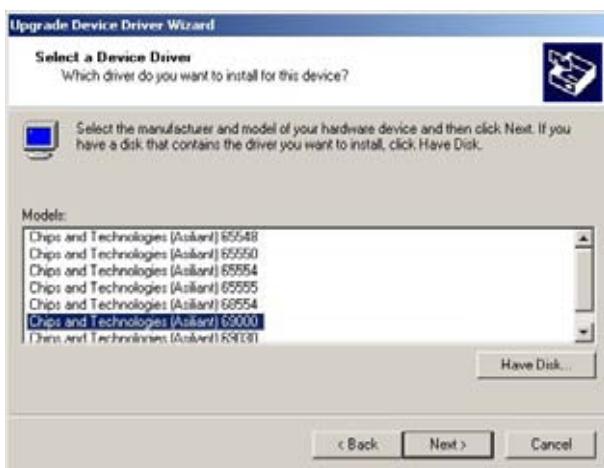
12. Find **D:\VGA\65555-69K\Win2k** on the utilities disk.

Click **OK**.



13. Select **Chips and Technologies (Asilant) 69000**.

Click **OK**.



14. Click **Next**.



NOVA 3710 Main Board

15. Click **Yes**.



16. Click **Finish**.



Enable Second LCD Panel Settings Windows 2000

After you have installed the VGA drivers for both the Primary LCD panel and second LCD panel you must adjust the settings.

1. Right click your mouse anywhere on the desktop



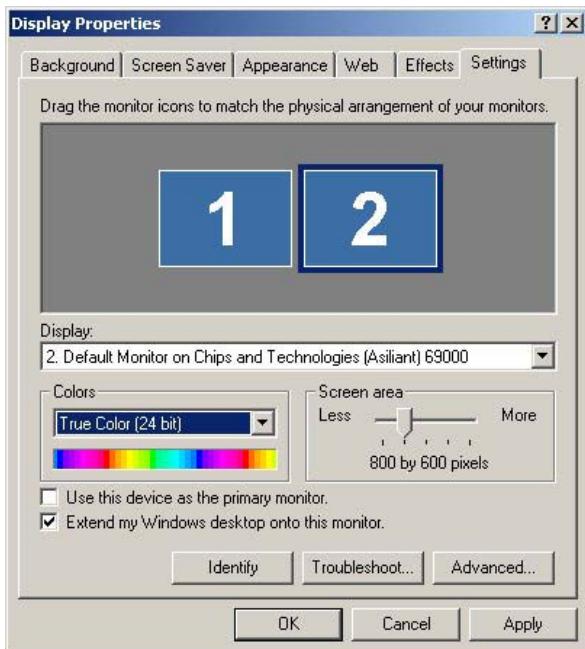
2. Click the **Settings** tab.



3. Make sure that for the primary LCD that both **Use this device as the primary monitor** and **Extend my Windows desktop onto this screen** are selected.

NOVA 3710 Main Board

4. Select the second LCD panel. This is done either by clicking on the number 2 or selecting from the dropdown menu.



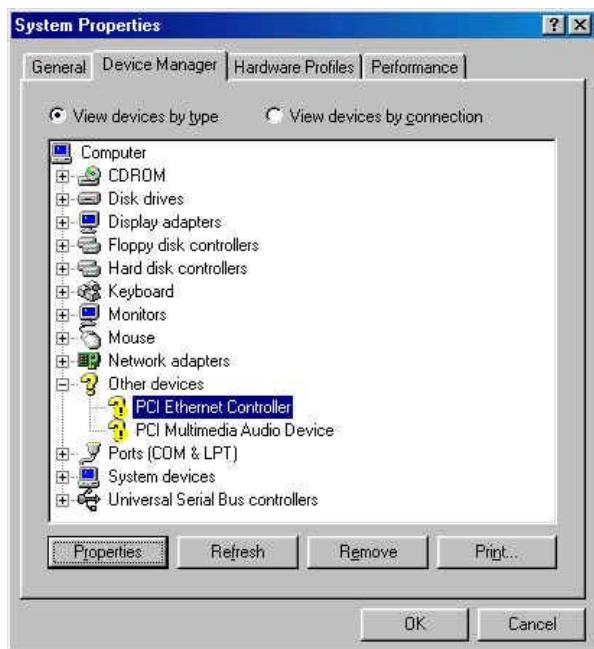
5. For the second LCD panel make sure that **Extend my Windows desktop onto this monitor** is selected.

During boot sequence “**No Sync**” will appear on the second LCD panel. The boot sequence can take a minute or so when a second LCD panel is installed.

LAN Driver Installation

Realtek LAN Driver Installation Windows 98

1. Open Device Manager in the **System Properties**.
Select **PCI Ethernet Controller**.
Click **Properties**.



2. Select the **Driver** tab.
Click **Update Driver**.



NOVA 3710 Main Board

3. Click **Next**.



4. Select **Search for a better driver than the one your device is using now (Recommended)**.
Click **Next**.



5. Select **Specify a location**:

Click **Browse**.

Open **D:\LAN\REALTEK\8139C\WIN98**

Click **Next**.



NOVA 3710 Main Board

6. Click **Next**.



7. Click **Finish**.



8. Click **Yes** to restart your computer.



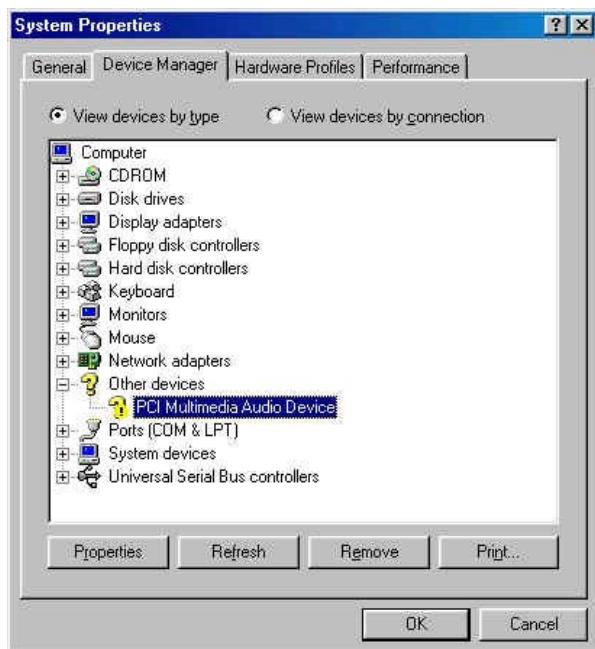
Realtek LAN Driver Installation Windows 2000

After Windows 2000 is installed the Realtek LAN driver will be automatically installed.

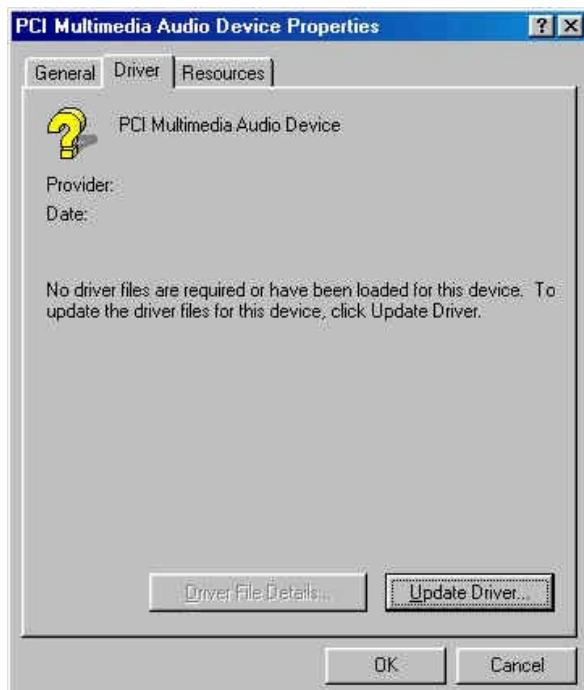
Audio Driver Installation

Audio Driver Installation Windows 98

1. Open Device Manager in the **System Properties**.
Select **PCI Audio Device**.
Click **Properties**.



2. Select the **Driver** tab.
Click **Update Driver**.



NOVA 3710 Main Board

3. Click **Next**.



4. Select **Search for a better driver than the one your device is using now (Recommended)**. Click **Next**.



5. Select **Specify a location**:

Click **Browse**.

Open **D:\AUDIO\SiS\SiS630\WIN95_98**

Click **Next**.



NOVA 3710 Main Board

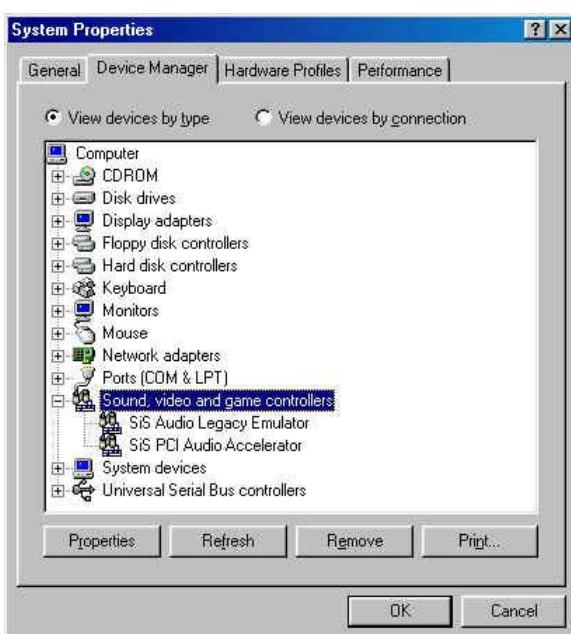
6. Click **Next**.



7. Click **Finish**.



8. After the audio driver is installed you should see two items under the Sound, Video and game controllers. **SiS Audio Legacy Emulator** and **SiS PCI Audio Accelerator**.



Audio Driver Installation Windows 2000

1. Locate the Audio folder on the utilities CD.

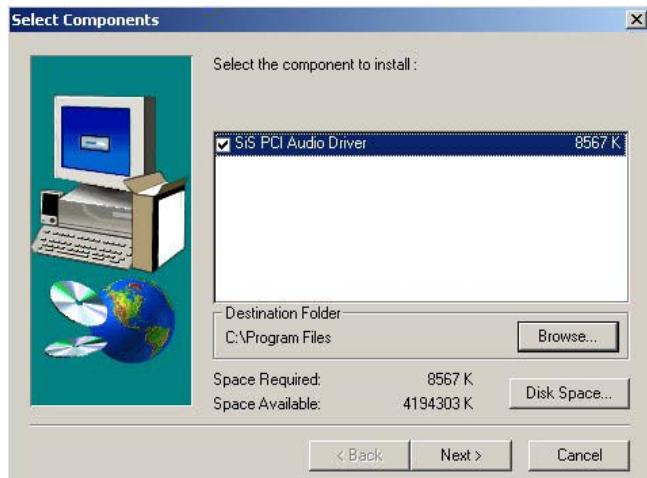
Open the **Audio/SIS/SIS630** folder.

Run **Setup.exe**

Click **Next**.



2. Click **Next**.



NOVA 3710 Main Board

3. Click Yes.



4. Select Yes, I want to restart my computer.



ELO Touch Tools Installation

The EIO Touch Tools installation will auto run after inserting it in the CD-ROM.

ELO Touch Tools Installation for Windows 98 and 2000

The procedure is the same for Windows 98 and Windows 2000.

1. Select **"Install MonitorMouse"** for the correct operating system you have installed on Gladius.



2. Select **Next**.



3. Read the **"License Agreement"** and click **Yes** if you accept it.

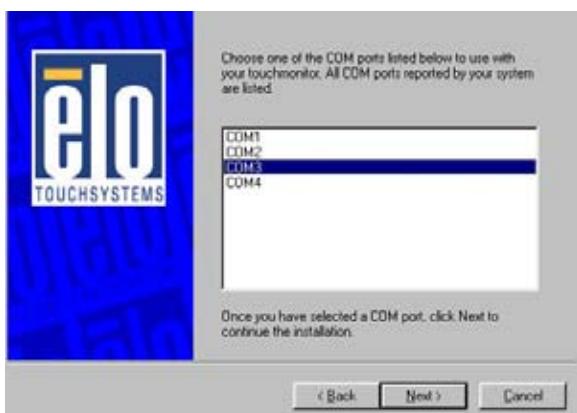


NOVA 3710 Main Board

4. Select If you have one or two monitors and click **Next**.



5. Select the COM port for the monitor. It is recommended that you select **COM3** for primary touch screen and **COM4** for second touch screen. Press **Next**.



6. Wait until the ELO Touch Tools have been installed.



7. Select View ELO touch screen control panel.
8. Click **Finish**. Gladius will reboot automatically.

NOVA 3710 Main Board



After the system finishes rebooting follow the directions to calibrate ELO Touch Tools.

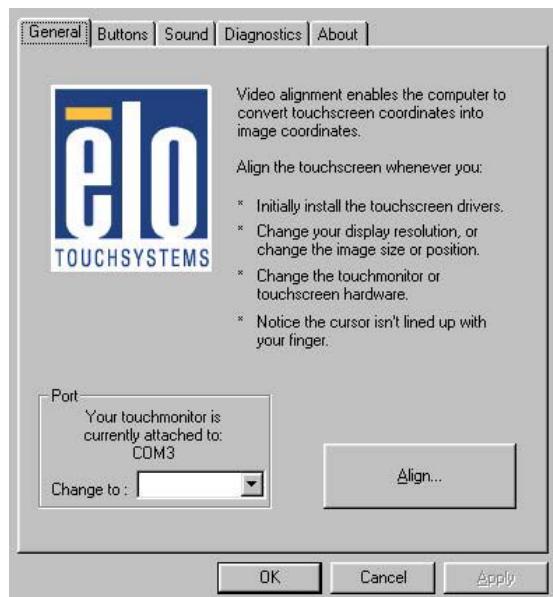
ELO Control Panel

This section explains the different options in the ELO control Panel.

General tab

The general tab allows you to:

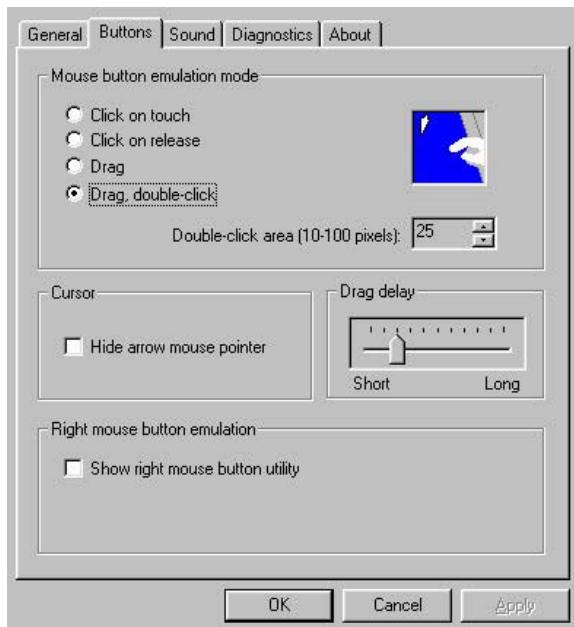
- Change the COM port your touch screen is set to.
- Calibrate the touch screen with the **Align** button.



Buttons tab

The Buttons tab allows you to:

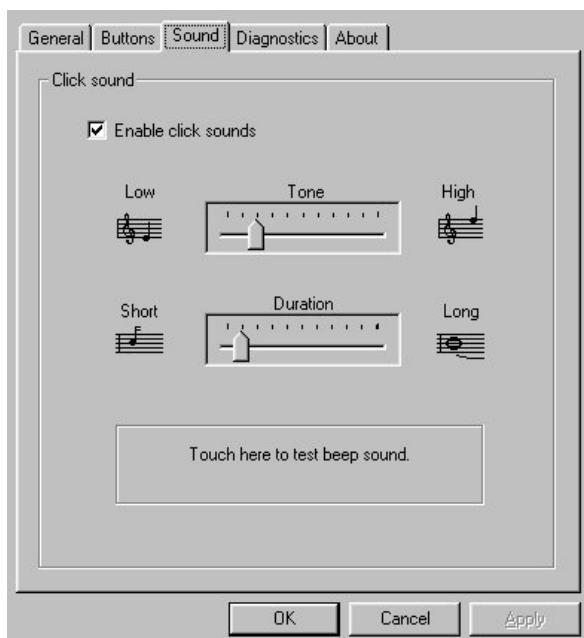
- Adjust all mouse emulation controls.
- Change cursor properties.
- Enable or disable right mouse button utility.



Sound tab

The Sound tab allows you to:

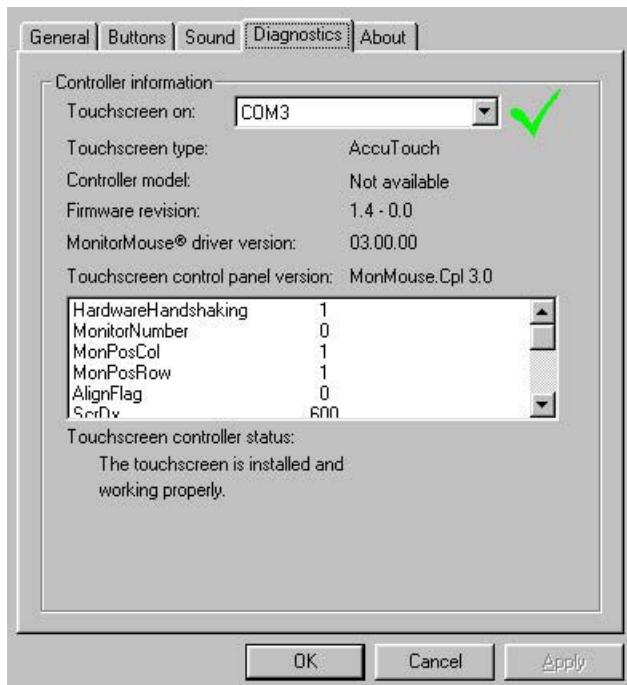
- To change sound properties for ELO touch tools.



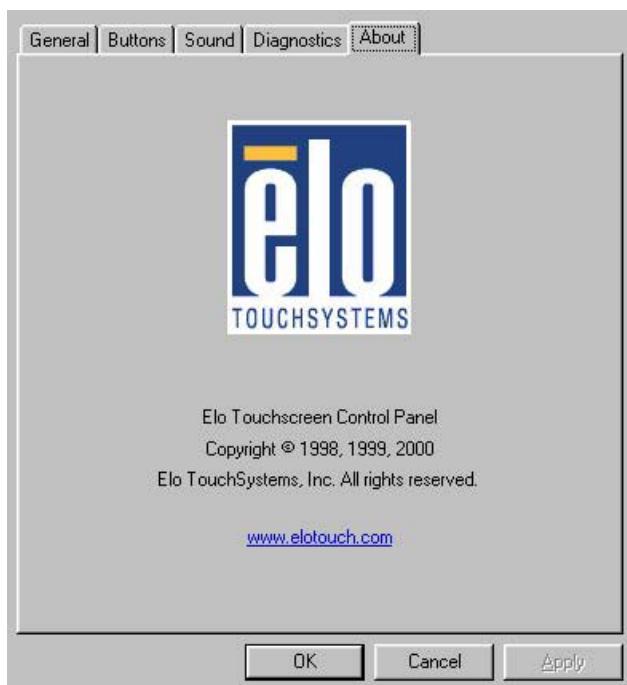
Diagnostics tab

The Diagnostics tab allows you to:

- View Controller Information.

**About tab**

The About tab displays Information about ELO Touchsystems



Chapter 4

Specifications

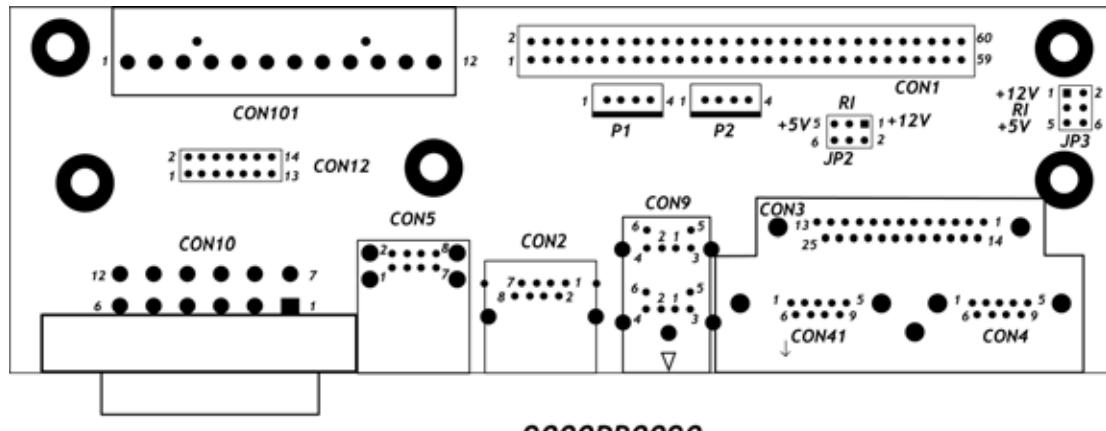
System Configuration	
CPU	Supports Intel Celeron® up to 1 GHz, Pentium III (FC-PGA) 850 MHz (or Above) Processor. Supports 66MHz, 100MHz and 133 MHz FSB.
Chipset	SIS630S 66/100/133MHz CPU / DRAM Clock.
DRAM	One 168-pin DIMM socket, supports SDRAM module, up to 512MB
Primary SVGA	Onchip AGP SIS300 3D (Share memory up to 64MB RAM) for primary LCD panel.
Secondary SVGA	Onboard PCI C&T69000 (2MB memory) for second LCD panel (NOVA3710DV only).
LCD Panel	12" TFT LCD Panel (800X600) or 15" TFT LCD Panel (1024X768)
Touch Panel(s)	ELO 5-wire resistive touch panel(s).
CompactFlash	Type II CompactFlash™ (as IDE Disk socket compatible).
HDD	Internal 3.5" 20GB hard disk drive (or above).
Power	160 watt external power adapter.
I/O Port	
Serial Port	2 User available Com ports (COM1 & COM2). 2 System assigned Com ports (COM3 & COM4). ➤ COM3 for touch screen. ➤ COM4 for customer character display, or 2 nd Touch Panel.
Parallel Port	One Bi-directional Parallel Port Support ECP/EPP.
USB port	Supports Two USB ports. USB V1.2 compatible.
Cash drawer port	RJ11 Cashdrawer port ,12V actuation support.
Mouse Port	One PS/2 mouse port.
Keyboard Port	One PS/2 keyboard port.
LAN Port	10/100Mbps Ethernet Controller Realtek 8139C.
VGA Port	Standard VGA Port for 2 nd LCD Panel or standard VGA monitor.
CD-ROM Port	Supports 24x Slim type external CD-Rom drive.
Audio Port	Integrated SIS7018, Sound Blaster compatible, AC97 compliant.

Optional Features	
Customer display	Integrated VFD/LCD customer display.
Magnetic card reader	Integrated Single/Dual/Triple Track MCR.
FDD	External Floppy disk drive via USB.
CD-ROM	External 24X slim type CD-ROM drive.
Second LCD Panel	Integrated 12" TFT LCD Panel. Gladius must have mainboard Nova-3710 DV installed to use a second LCD panel.
Second Touch Panel	12" ELO 5-wire resistive touch panel. Gladius must have mainboard Nova-3710 installed to use a second LCD panel.
Power Consumption	
	40-50W Idle (Standard system and secondary LCD panel while reading HDD), (50-60W if 2 nd Panel is 15").

I/O board Configuration

The main I/O board 9000PB0090 covers the primary I/O ports to the mainboard. Including: DC power input, COM1 and COM2, LPT1, PS/2 keyboard, PS/2 mouse, audio, USB and LAN port.

9000PB0090 I/O Board Pin Definition



CON101 System DC power connector

PIN No.	Description
1	DC +12V
2	+5SB
3	NC
4	GND
5	NC
6	GND
7	DC +5V
8	DC +5V
9	NC
10	GND
11	GND
12	PSON

CON10 DC power connector for Mainboard

PIN No.	Description
1	DC +12V
2	+5SB
3	NC
4	GND
5	NC
6	GND
7	DC +5V

NOVA 3710 Main Board

8	DC +5V
9	NC
10	GND
11	GND
12	PSON

CON3

parallel port LPT1 D-SUB25 connector

PIN No.	Description	PIN No.	Description
1	PRT_STB#	2	PRT_D0
3	PRT_D1	4	PRT_D2
5	PRT_D3	6	PRT_D4
7	PRT_D5	8	PRT_D6
9	PRT_D7	10	PRT_ACK#
11	PRT_BUSY	12	PRT_PE
13	PRT_SLCT	14	PRT_AED#
15	PRT_ERR#	16	PRT_INIT#
17	PRT_SLIN	18	GND
19	GND	20	GND
21	GND	22	GND
23	GND	24	GND
25	GND		

CN10

PS/2 keyboard connector

PIN No.	Description
1	KB-DATA
2	NC
3	GND
4	+5V
5	KB-CLK
6	NC

CON8

PS/2 mouse connector

PIN No.	Description
1	Mouse_DATA
2	NC
3	GND
4	+5V
5	Mouse_CLK
6	NC

CON13 *Audio line output EAR connector*

PIN No.	DESCRIPTION
1	EAROUT-L
2	GND
3	EAROUT-R

CON2 *RJ45 LAN connector*

PIN No.	Description
1	LAN_TX+
2	LAN_TX-
3	LAN_RX+
4	LAN_L45
5	LAN_L45
6	LAN_RX-
7	LAN_L78
8	LAN_L78

CON4&CON41 *RS232 port COM1 and COM2 D-SUB connector*

PIN No.	Description
1	DCD
2	SIN
3	SOUT
4	DTR
5	GND
6	DSR
7	RTS
8	CTS
9	RI/DC output (RI is the default setting)

Pin9 signal can be selected as standard RI or DC power output depending on the JP2 and JP3 jumper settings. The default settings are for RI.

Attention: For devices using external power supplies and connected through Pin9 of COM1 or COM2, JP2 and JP3 should be open.

JP3	Description
1-2	PIN9 of COM1=DC +12V
3-4	PIN9 of COM1=RI (Default setting)
5-6	PIN9 of COM1=DC +5V

JP2	Description

NOVA 3710 Main Board

1-2	PIN9 of COM2=DC +12V
3-4	PIN9 of COM1=RI(Default setting)
5-6	PIN9 of COM2=DC +5V

CON5 *USB port*

PIN No.	Description	PIN No.	Description
1	+5V	2	+5V
3	USB_0-	4	USB_1-
5	USB_0+	6	USB_1+
7	GND	8	GND

CON1 *I/O Bus connector*

PIN No.	Description	PIN No.	Description
1	EAROUT_L	2	DIO_IN00
3	DIO_OUT01	4	DIO_OUT00
5	COM4_DTR	6	COM4_DSR
7	COM4_RTS	8	COM4_CTS
9	EAROUT_R	10	COM4_SOUT
11	COM2_CTS	12	COM2_RI
13	COM2_DSR	14	COM2_RTS
15	COM2_SOUT	16	COM2_DTR
17	COM2_DCD	18	COM2_SIN
19	COM1_CTS	20	COM1_RI
21	COM1_DSR	22	COM1_RTS
23	COM1_SOUT	24	COM1_DTR
25	COM1_DCD	26	COM1_SIN
27	PC_CLK	28	PC_DATA
29	MOUSE_CLK	30	MOUSE_DATA
31	USB_1+	32	USB_1-
33	USB_0+	34	USB_0-
35	COM4_SIN	36	PRT_STB#
37	PRT_D0	38	PRT_D1
39	PRT_D2	40	PRT_D3
41	PRT_D4	42	PRT_D5
43	PRT_D6	44	PRT_D7
45	PRT_ACK#	46	PRT_PE
47	PRT_BUSY	48	PRT_SLCT
49	PRT_AED#	50	PRT_ERR#
51	PRT_INIT#	52	PRT_SLIN

NOVA 3710 Main Board

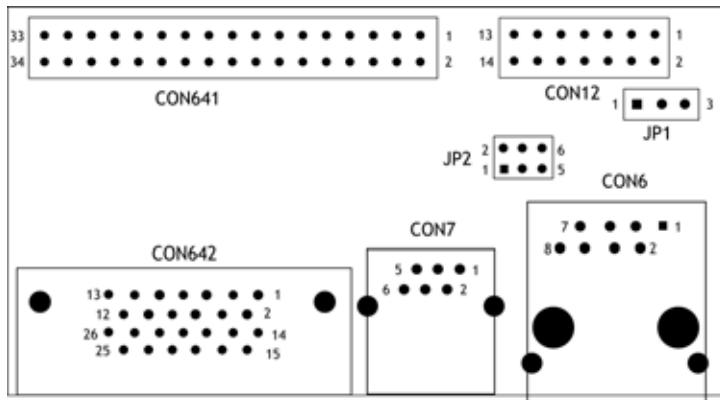
53	LAN_L78	54	LAN_L78
55	LAN_L45	56	LAN_L45
57	LAN_TX+	58	LAN_RX+
59	LAN_TX-	60	LAN_TX+

CON12 COM4, Digit I/O signal and DC power connector

A 14 wire cable connects to 9000PB0100 secondary I/O board CN8, this supplies single and power for the VFD customer display and Cash Drawer.

PIN No.	Description	PIN NO	Description
1	DIO_OUT00	2	COM4_CTS
3	DIO_OUT01	4	COM4_SIN
5	DIO_IN00	6	COM4_OUT
7	+5V	8	COM4_RTS
9	+5V	10	COM4_DTR
11	+12V	12	COM4_DSR
13	+12V	14	GND

9000PB0100 I/O Board Pin Definition



9000PB0100

9000PB0100 secondary I/O board includes EXT FDD port, Cash drawer, and COM4/VFD ports.

CON6

Com4 uses the RJ-45 connector to accept VFD customer display. If the customer display is not required, this port may function as an RS-232C port. An adapter cable to convert RJ-45 to DB-9 may be obtained from your supplier. Jumpers on the circuit board must also be reconfigured as shown in the figure.

Mode1 RJ45 connector used for VFD (factory default setting)

JP1		JP2	
1-2	Short	1-2	Short
3-5	Short	3-5	Short
4-6	Short	4-6	Short

PIN No.	Description
1	COM4_SIN
2	COM4_SOUT
3	COM4_DSR
4	COM4_DTR
5	GND
6	GND
7	+12V
8	+12V

Mode2 RJ45 connector used for RS232 device

JP1		JP2	
2-3	Short	1-3	Short
2-4	Short	2-4	Short

NOVA 3710 Main Board

PIN No.	Description
1	COM4_SIN
2	COM4_SOUT
3	COM4_DSR
4	COM4_DTR
5	COM4_RTS
6	GND
7	COM4_CTS
8	+5V

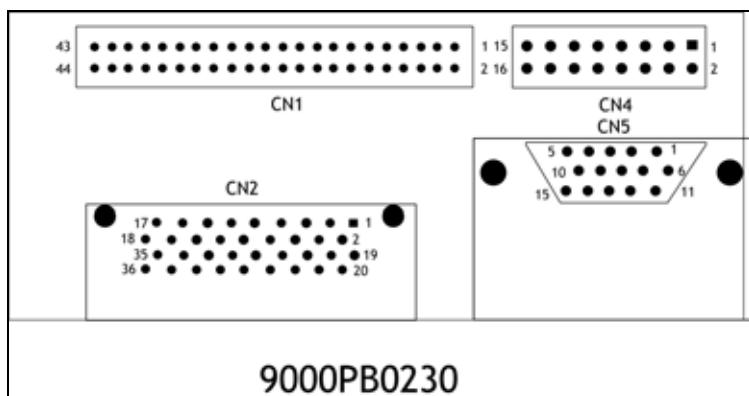
CON7 *Cash drawer RJ11 connector*

PIN No.	DESCRIPTION
1	FG
2	L1-
3	SW+
4	DC +12V (L1+/L2+)
5	L2-
6	SW-

CON642 *Floppy Disk Driver Connector*

PIN No.	Description	PIN No.	Description
1	REDECE_WRITE	2	TRACK0#
3	NC	4	WRITE PROTECT#
5	NC	6	READ DATA#
7	INDEX#	8	SIDE SELECT#
9	MOTOR ENABLE B#	10	DISK CHANGE#
11	DRIVE SELECT A#	12	GND
13	DRIVE SELECT B#	14	GND
15	MOTOR ENABLE B#	16	NC
17	DIRECTION#	18	GND
19	STEP#	20	GND
21	WRITE DATA#	22	+5V
23	WRITE GATE#	24	+5V
25	GND	26	+5V

9000PB0230 I/O Board Pin Definition



9000PB0230 Third I/O board includes external CD ROM and VGA port.

CN2 *External CD ROM connector*

PIN No	Description	PIN No	Description
1	IDE RESET	2	GND
3	DATA7	4	DATA8
5	DATA6	6	DATA9
7	DATA5	8	DATA10
9	DATA4	10	DATA11
11	DATA3	12	DATA12
13	DATA2	14	DATA13
15	DATA1	16	DATA14
17	DATA0	18	DATA15
19	GND	20	GND
21	IO WRITE	22	ADDR2
23	IO READ	24	ADDR1
25	HD READY	26	ADDR0
27	IRQ14	28	HDD SELECT0
29	GND	30	HDD SELECT1
31	VCC	32	VCC
33	LINE-L	34	VCC
35	GND	36	LINE-R

CN5 *VGA connector*

PIN No.	Description
1	RED
2	GREEN

NOVA 3710 Main Board

3	BLUE
4	NC
5	GND
6	GND
7	GND
8	GND
9	NC
10	GND
11	NC
12	SM DATA
13	SM CLK
14	V-SYNC
15	H-SYNC

CN1

44PIN 2.00mm IDE connector connects to the mainboard secondary IDE connector CN3

PIN No.	Description	PIN No.	Description
1	RESET#	2	GND
3	DATA 7	4	DATA 8
5	DATA 6	6	DATA 9
7	DATA 5	8	DATA 10
9	DATA 4	10	DATA 11
11	DATA 3	12	DATA 12
13	DATA 2	14	DATA 13
15	DATA 1	16	DATA 14
17	DATA 0	18	DATA 15
19	GND	20	N/C
21	IDE DRQ	22	GND
23	IOW#	24	GND
25	IOR#	26	GND
27	IDE CHRDY	28	GND
29	IDE DACK	30	GND
31	INTERRUPT	32	N/C
33	SA 1	34	N/C
35	SA 0	36	SA 2
37	HDC CS0#	38	HDC CS1#
39	HDD ACTIVE#	40	GND
41	+5V	42	+5V
43	GND	44	+5V

CN4 VGA 2x8 PIN header connector connects to the mainboard CN6

PIN No.	Description
1	RED
2	GREEN
3	BLUE
4	NC
5	GND
6	GND
7	GND
8	GND
9	NC
10	GND
11	NC
12	SM DATA
13	SM CLK
14	V-SYNC
15	H-SYNC

Chapter 5

Troubleshooting

Please note that the following troubleshooting guide is designed for people with strong computer hardware knowledge such as System Administrators and Engineers.

Power is on, but there is no Panel Display

- A)** Check that the external power adapter LED is on when the power adapter power switch is in the on position.
Ensure that the correct AC voltage is selected (the voltage switch is located beside the power switch).
- B)** Check that the Power and CPU fans are running when system power is on.
 - B-1)** Check whether the ATX power switch cable is properly connected to mainboard CN21 PIN9 and PIN10 (Please refer to page 9 and page 20 in the NOVA3710 User's guide).
 - B-2)** Check that the power cable is connected properly between 9000PB0090 primary I/O board CON101 and mainboard CN25.
- C)** Please ensure that the IDE cable is properly connected to the HDD and the red stripe on the ribbon cable should align with PIN1 on the IDE connector of HDD.
- D)** Reset CMOS DATA by shorting mainboard JP11 PIN1 and PIN2 for a few seconds (Please refer to page11 in the NOVA3710 User's guide).
- E)** Check if the system is beeping.
 - E-1)** A single long repeated beep indicates that a DRAM error has occurred. Make sure DRAM is properly installed or replace DRAM.
 - E-2)** One short beep after power on, means system is ok, but LCD panel or VGA interface could be defective.
 - E-2-1)** INIT display should be set for AGP in the CMOS setup.
 - E-2-2)** LVDS board connection to mainboard CN14 could be defective.
 - E-2-3)** The connection between the LVDS board and the LCD panel connector not connected properly.
 - E-2-4)** The LCD cable could be defective.
 - E-2-5)** The Inverter cannot produce backlight.
 - E-2-6)** The LCD panel could be defective.

To check where the problem could be:

Please connect a VGA monitor to the VGA port. If the VGA monitor is display normally, one of the problems above is occurring, otherwise it could be the mainboard is not functioning properly.

Cannot Detect HDD

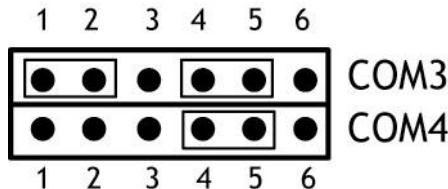
- A) IDE cable is not connected properly to mainboard CN15 or it could be defective.
- B) HDD power cable is not connected properly to the I/O board or it could be defective.
- C) Check CMOS setup, set IDE HDD to Auto detects.
- D) On-board IDE port could be defective.

Touch Panel Does not Work

- A) Check CMOS settings, COM3 needs to be “Enabled”. The correct settings are “3E8h” and “IRQ10”.
- B) Check that there are no conflicts between COM3 IRQ10 and any other devices.
- C) Check that the ELO driver has been properly installed. Or try to re-install again (Please refer to the ELO driver installation).
- D) Check that the ELO controller on COM3 has been detected during the ELO driver installation. If yes, than check that the flat cable from the ELO touch screen has been properly connected to the ELO controller (**Attention:** Pin1 mark should be on the same side as the ELO controller).
- E) Check that the ELO controller Green LED is blinking?

If no, there is no DC+5V support for the ELO controller from the mainboard.

- E-1) Check the mainboard JP4 jumper settings. The correct jumper settings for the Touch screen are:



- E-2) Check that the COM3 cable is properly connected between mainboard CN23 and the Touch screen controller.
- F) Touch screen controller could be defective or the touch panel could be defective.

ELO Touch Panel Cannot Calibrate Correctly

- A) Please replace the ELO controller, and re-calibrate. If this works, change back to the original ELO controller, and re-calibrate.
- B) If the ELO touch panel still cannot calibrate correctly after changing to a new ELO controller, the touch panel may be not installed properly or it could be defective.

Second LCD Panel is Not Functioning Properly

- A) Check that both VGA drivers SIS630 and C&T69000 are installed properly (Please refer to the VGA driver installation).
- B) Connect a VGA CRT monitor to the VGA2 connector, if there is a display, then the second LCD panel could be defective or is not installed properly.
 - B-1) Please check that both the VGA signal cable and second LCD power cable are connected properly (Shut the power off before connecting the 2 above mentioned cables).
 - B-2) Check that the VGA cable is connected to A/D board CN2. Or it could be

defective.

B-3) Check that the LCD signal cable is properly connected to A/D board CN8 and LCD panel. Or it could be defective.

Please re-connect both ends of the LCD signal cable in the correct location. Or replace with a new cable.

B-4) There will be no backlight if the inverter is defective.

C) Check that the 16 PIN VGA cable is connected to mainboard CN6 and 9000PB0480 secondary I/O board CN4 properly.

D) The mainboard C&T69000 chip could be defective.

E) The 9000PB0480 secondary I/O board could be defective.

F) If there is no power supply from the 9000PB0480 secondary I/O board, then check if the power cable is properly connected between position P1 of 9000PB0480 and position P1 of 9000PB0090. If there is still no power then the fuse "F3" on the 9000PB0480 could be defective.

PS/2 Keyboard is not Functioning Normally

A) Make sure the keyboard is properly connected to the PS/2 keyboard port before the system is powered up. If the keyboard is connected after Windows2000 has been booted, the keyboard will not work.

B) Check that the LED on the keyboard goes on then off after power on. If yes, the keyboard is getting power correctly. If not, the F3 fuse on the 9000PB0090 primary I/O board could be faulty.

C) If the MCR is not required. Please make sure the loopback is plugged into the MCR connector board.

D) Check that the 6 wire cable has been properly connected between the MCR connector board and mainboard CN20.

The mainboard CN20 cable can be removed. Then short PINs 2-3 and PINs 4-5 If the keyboard still does not work, then check next step. Otherwise, the cable or MCR connector board could be defective.

E) Check that the 60PIN I/O bus cable is properly connected.

F) The mainboard could be defective.

MCR is not Functioning Properly

A) Check if the green MCR LED is on.

A-1) Check if the MCR is properly connected to the MCR connector board on main system.

A-2) Make sure the 6 wire cable is properly connected between mainboard CN20 and the MCR connector board.

A-3) The MCR connector board could be defective.

A-4) The MCR module could be defective.

B) If a keyboard is connected to the PS/2 keyboard port, and functions correctly, then the MCR module could be defective.

C) For an MCR to work under Windows2000, the keyboard must be connected prior to booting the system.

VFD Display is not Functioning Properly

- A)** Ensure that COM4 is enabled in the CMOS setup, and data is written to COM4 in the application.
- B)** Check if there is any display when system power is ON, if the screen is blank, please follow the steps below.
 - B-1)** Make sure the power switch on the VFD display is on before powering the main system.
 - B-2)** Make sure that the 9000PB0100 secondary I/O board JP1 & JP2 jumper settings are correct.
The proper settings are:
 - JP1 PINs 1-2 shorted**
 - JP2 PINs 1-2, PINs 3-5 and PINs 4-6 shorted**
- B-3)** Fuse F1 on the 9000PB0100 secondary I/O board could be faulty.
- C)** Check if the 14pin cable is properly connected between 9000PB0100 secondary I/O board CON12 and 9000PB0090 primary I/O board CON12.
- D)** The 9000PB0090 primary I/O board or 9000PB0100 secondary I/O board could be defective.
- E)** The on-board COM4 I/O chips could be defective.

External CD-ROM is not Functioning Properly

- A)** Make sure IDE2 is set to "AUTO" in the CMOS setup.
- B)** If compact flash memory is installed, remove it and try again.
- C)** Make sure the CD-ROM cable is properly connected to the CD-ROM port of I/O panel and the CD-ROM drive. This must be done with the system power off.
- D)** Check that the 44pin cable is properly connected between 9000PB0230 third I/O board CN1 and mainboard CN3.
- E)** The CD-ROM could be defective.
- F)** The 9000PB0230 third I/O board could be defective.
- G)** The on board IDE2 port could be defective.

LAN is not Functioning Properly

- A)** Check if the LAN driver is installed properly. (Please refer to the LAN driver installation).
- B)** Check if there are any IRQ conflicts.
- C)** Check if the RJ45 twinspare cable is properly connected.
- D)** Check if the 60pin I/O bus cable is properly connected.
- E)** The 9000PB0090 primary I/O board could be defective.
- F)** The on board LAN chip could be defective.

COM1, COM2 and LPT1 are not Functioning Properly

- A)** Check if the I/O ports are enabled in the CMOS setup.
- B)** Check if there are any IRQ conflicts.

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- C)** Check if the 60pin I/O bus cable is properly connected.
- D)** The 9000PB0090 primary I/O board could be defective.
- E)** The mainboard could be defective.

Cash Drawer Port is not Functioning Properly

- A)** Make sure the pin assignment matches between the cash drawer and the RJ11 cash drawer port.
- B)** Verify the digit I/O port address and bit are “408h” and “bit4” respectively. Command send “L” level for 200ms (Refer to NOVA3710 user’s manual page 80).
- C)** Check if the 60pin I/O bus cable is properly connected.
- D)** Check that the 14PIN cable is properly connected between 9000PB0090 primary I/O board CON12 and 9000PB0100 secondary I/O board CON2.
- E)** The 9000PB0090 primary I/O board or 9000PB0100 secondary I/O board could be defective.
- F)** The mainboard could be defective.

USB device is not Functioning Properly

- A)** Ensure that the USB controller is “enabled” in the CMOS setup.
- B)** Check if the 60pin I/O bus cable is properly connected.
- C)** Fuse F2 on the 9000PB0090 primary I/O board could be faulty. If so no power can supply the USB port.
- D)** The mainboard or 9000PB0090 primary I/O board could be defective.

External FDD is not Functioning Properly

- A)** Please make sure the Driver A in the CMOS setup are enabled for 1.44MB.
- B)** Make sure the FDD cable is properly connected to the FDD port on primary connector panel and FDD driver. This must be done with the system power off.
- C)** Check that the 34pin cable is properly connected between 9000PB0230 second I/O board CON641 and mainboard CN8.
- D)** The mainboard FDD controller could be defective.
- E)** The fuse1 on 9000PB0230 I/O board could be defective.
- F)** The 9000PB0230 I/O board could be defective.